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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,899	03/04/2004	Yoshihisa Yonezawa	YONE3013/EM	4664
23364	7590	05/09/2006	EXAMINER	
BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			WON, BUMSUK	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 05/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

**Office Action Summary**

Application No.

10/791,899

Applicant(s)

YONEZAWA ET AL.

Examiner

Bumsuk Won

Art Unit

2879

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 February 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8 and 24-26 is/are allowed.
- 6) ☒ Claim(s) 2,3,7,11-16,20 and 23 is/are rejected.
- 7) ☒ Claim(s) 4-6,9,10,17-19,21 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| <p>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br/>Paper No(s)/Mail Date _____</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)<br/>Paper No(s)/Mail Date _____</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: _____</p> |
|---|---|

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 2, 3, 7, 11-13, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yonezawa (US 2002/0121857) in view of Yoshinobu (JP 59-146139).
2. Regarding claim 11, Yonezawa discloses an electron tube (figures 5a-5c, paragraphs 83-85) comprising: a vessel (figure 5b); a primary linear member (53) installed in the vessel; an electrode (56) disposed in the vessel; an auxiliary linear member (57); and a fixing member (521) formed at a single substrate (51) constituting a part of the vessel for fixing end portions of the auxiliary linear member thereto, wherein two end portions of each auxiliary linear members are fixed to two different fixing members (figure 5a shows each auxiliary linear member is fixed to different fixing members), respectively.

Yonezawa does not teach there is a second auxiliary linear member disposed at different height and the first and second auxiliary linear members interpose the primary linear member in between.

Yoshinobu discloses an electron tube (figures 1-3) where there are a first auxiliary linear member (25, top) and a second auxiliary linear member (25, bottom) that interpose the primary linear member (20) in between, for the purpose of fixing the location of the primary linear member.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a first auxiliary linear member and a second auxiliary linear member that interpose the primary linear member in between disclosed by Yoshinobu in the electron tube disclosed by Yonezawa, for the purpose of fixing the location of the primary linear member.

Regarding claim 2, Yonezawa discloses the auxiliary linear members (57) are fixed to the fixing members (521) by embedding therein at least parts of the end portions thereof.

Regarding claim 3, Yonezawa discloses metal layers (52) formed at the substrate, and wherein the fixing members (521) are fixedly attached to the metal layers by an ultrasonic bonding method (paragraph 84), and the end portions of the auxiliary linear members are fixedly attached to the fixing members by ultrasonic bonding method (paragraph 84).

Regarding claim 7, Yonezawa discloses the auxiliary linear members are arranged in a direction intersecting the primary linear member (figure 5a), and wherein the fixing members include spacer pads (551) determining the heights of the auxiliary linear members, the spacer pads being fixed to the substrate via metal layers (52) formed thereat, and the end portions of the auxiliary linear members (57) are fixed to different spacer pads (figure 5c, 551), respectively.

Regarding claim 12, Yonezawa discloses the primary linear member (53) and the auxiliary linear members (57) are disposed parallel to the single substrate (51).

Regarding claim 13, Yonezawa discloses a fixing member (figure 4a, 121) formed at the single substrate (412) for fixing end portions of the primary linear member (13) thereto.

3. Regarding claim 14, Yonezawa (US 2002/0121857) discloses an electron tube (figures 5a-5c, paragraphs 83-85) comprising: a vessel (figure 5b); a primary linear member (53) installed in the vessel; an electrode (56) disposed in the vessel; an auxiliary linear member (57); and a fixing member (521) formed at a single substrate (51) constituting a part of the vessel for fixing end portions of the auxiliary linear member thereto, wherein the primary linear member (53) and the auxiliary linear members (57) are disposed parallel to the single substrate (figure 5b, 51).

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Yonezawa does not teach there is a second auxiliary linear member disposed at different height and the first and second auxiliary linear members interpose the primary linear member in between.

Yoshinobu discloses an electron tube (figures 1-3) where there are a first auxiliary linear member (25, top) and a second auxiliary linear member (25, bottom) that interpose the primary linear member (20) in between, for the purpose of fixing the location of the primary linear member.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a first auxiliary linear member and a second auxiliary linear member that interpose the primary linear member in between disclosed by Yoshinobu in the electron tube disclosed by Yonezawa, for the purpose of fixing the location of the primary linear member.

Regarding claim 15, Yonezawa discloses the auxiliary linear members (57) are fixed to the fixing members (521) by embedding therein at least parts of the end portions thereof.

Regarding claim 16, Yonezawa discloses metal layers (52) formed at the substrate, and wherein the fixing members (521) are fixedly attached to the metal layers by an ultrasonic bonding method (paragraph 84), and the end portions of the auxiliary linear members are fixedly attached to the fixing members by ultrasonic bonding method (paragraph 84).

Regarding claim 20, Yonezawa discloses the auxiliary linear members are arranged in a direction intersecting the primary linear member (figure 5a), and wherein the fixing members include spacer pads (551) determining the heights of the auxiliary linear members, the spacer pads being fixed to the substrate via metal layers (52) formed thereat, and the end portions of the auxiliary linear members (57) are fixed to different spacer pads (figure 5c, 551), respectively.

Regarding claim 23, Yonezawa discloses a fixing member (figure 4a, 121) formed at the single substrate (412) for fixing end portions of the primary linear member (13) thereto.

*Response to Amendment*

4. The amendment filed on 2/27/2006 has been entered and is acknowledged by the Examiner. Claim 1 is cancelled and claims 11-26 are added.

*Allowable Subject Matter*

5. Claims 8 and 24-26 are allowed. The following is an examiner's statement of reasons for allowance: Regarding independent claim 8, the prior art of record neither teaches nor suggests an electron tube having two different auxiliary linear members disposed at different heights are disposed alternatively along the length direction of primary linear members, along with other claim limitations. Claims 24-26 are allowed due to their claim dependency.

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6. Claims 4-6, 9, 10, 17-19, 21 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Regarding claims 4, 9, 17 and 21, the prior art of record neither teaches nor suggests an electron tube having a spacer pad that is connected to two different auxiliary linear member that have different heights, along with other claim limitations. Claims 5, 6, 10, 18, 19 and 22 are objected to due to their claim dependency.

#### *Response to Arguments*

7. Applicant's arguments with respect to claims 2-7, 9 and 10 have been considered but are moot in view of the new ground(s) of rejection.

#### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will



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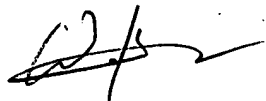
the statutory period for reply expire later than SIX MONTHS from the date of this final action.

*Contact information*


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bumsuk Won whose telephone number is 571-272-2713. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Bumsuk Won  
Patent Examiner

  
**JOSEPH WILLIAMS**  
**PRIMARY EXAMINER**